To: Shamet, Stefania[Shamet.Stefania@epa.gov]; Seligman, Andrew[Seligman.Andrew@epa.gov]
From: Jacobus, Thomas P WAD
Sent: Wed 1/21/2015 5:50:56 PM
Subject: Wednesday update: Washington Aqueduct plan to discharge Georgetown Basin #1 (UNCLASSIFIED)
April Pic 001 04-02-2012.jpg
GT 1 solid suspesion effort.jpg

Classification: UNCLASSIFIED
Caveats: NONE

We've got about 7 million gallons of water in the basin and all the sediment stirred up. That part was easier to do than we imagined.

A sample this morning was 1.6% solids or about 16,000 mg/Lit.

I went down to look and took another sample. It's very "liquid."

As you can see in the photo it's dark, but not in any way viscous.

The photo from today shows a black ridge down the center with dark liquid to the sides. The ridge is concrete.

You can see that in the last empty photo of the basin taken in April 2012 (attached).

We're ready to go when we get clearance. While we drain we'll push lots of flush water behind this and it will therefore get less and less dense as it goes along.

Tom

-----Original Message-----
From: Jacobus, Thomas P WAD
Sent: Tuesday, January 20, 2015 12:24 PM
To: 'Shamet, Stefania'; 'Seligman.Andrew@epa.gov'
Subject: Washington Aqueduct plan to discharge Georgetown Basin #1 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Stef and Andrew,

Washington Aqueduct has analyzed the situation at Georgetown Basin #1 in terms of our estimate of the sediment remaining in the basin, the volume of the basin, the ability of our equipment to stir up the solids into a uniform concentration, and the equipment we have to get rapid evaluation (within an hour) of the concentration of the material being discharged.

Based on earlier calculation and information supplied to you and to DC DOE we estimated that the total solids collected in Georgetown (both basins together) since it was last time it was completely cleaned in December 2012 was 6.5 million pounds.

The normal flow rate through both basins (together) is 65 million gallons per day that then goes for filtration and disinfection at the McMillan Water Treatment Plant. The normal distribution between the two basins (Basin #1 is only 1/5th the size of Basin #2 and we run Basin #1 at a slower rate) is about 5 MGD trough Basin #1 and 60 MGD through Basin #2.

Using that ratio (5/65), the expected solids collected in Basin #1 would be 500,000 pounds.

Assuming that 10 percent of those solids were discharged when we initially opened the valve and drained the basin leaves 450,000 pounds.

We plan to fill the basin so that it has about 4 feet of water in it. That will allow the front end loader to safely move the solids into suspension and for it to re-suspended them as the draining proceeds.

The profile of Basin #1 when the water surface elevation is at 136 feet (mean sea level) compared to the elevation of the drain invert of 132 feet (MSL) shows that 7.2 million gallons of water are in the basin.

That works out to 0.07 pounds of sediment per gallon which converts to 8,400 milligrams/Liter.

We have the ability to use a turbidimeter to measure up to 8,000 NTU for each sample collected. We will collect samples every four hours. We also have a machine at the residuals processing facility that can directly measure density in milligrams/Liter and get a result in an hour from the time we collect the sample.

The physical plan is to add water to the basin via the conduit from the Georgetown Reservoir and regulate the drain so that the incoming water keeps the total volume essentially constant. We also will take a hose and pump water from Basin #3 (settled water) into the drain to further dilute what is entering the discharge pipe from Basin #1.

We are filling Basin #1 now and will be testing the efficacy of using the front end loader to be the mixing device to make sure it is safe to use it, and we will get a preliminary concentration based on the mixing we do.

We will not open the drain and make any discharge until you and DDOE have agreed that this proposal is acceptable.

Once we begin, I estimate this may take about 4 to 5 days to complete. We will only work during the daylight hours (and not on the weekend).

If our testing of this concept today indicates any change to this proposal, I will let you know. When we spoke on Friday it was my understanding that we would limit ourselves to an instantaneous discharge concentration of 8000 NTU or if we use mg/L we would use 18,000. As the calculations above indicate, we should be well below that.

Tom J
202-764-0031

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE